

ABSTRACT

~~In accordance with this invention a~~ compaction unit (100) ~~is provided that includes:~~ (a) an elongated open-ended ramming chamber (50) having a fill port opening (51); ~~a longitudinal bore (52), a compression end (53), and an extrusion end (57),~~ (b) ~~a~~ ramming head (20) pushes material within ~~compression end (53) of ramming chamber (50) along longitudinal bore (52),~~ (c) to add a new lift to a continuous homogeneous block (40) comprised of all previously compressed material ~~occupies the bulk of the extrusion end (57) of ramming chamber (50), and functions as an integral part of the compaction unit (100),~~ (d) a hydraulic cylinder (10) (part of an actuator) provides movement to ramming head (20) to compress the loose block-making material (40A) (e.g., earth) against block (40). This forms a new lift (40B) that is effectively fused with the previous lift (40C) to form a continuous homogeneous block (40) of relatively high density material that ~~exits the compaction unit (100).~~ As the ramming head (20) moves forward, it closes off the fill port opening (51). A shearing chamber (60) fractures the blocks to any desired length, while a support platform (70) supports and stores the blocks until utilized. The shearing chamber (60) moves transverse to the ramming chamber to form the fracture. A process is described that utilizes standard construction equipment and a modified lifting device to hoist and place the blocks within a building system. Additionally, a special design feature (22) is incorporated into ramming head (20) to increase the "frictional threshold" of the material being compressed within chamber 50.